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BEFORE THE ARIZONA CORPORATION COMMISSION

GARY PIERCE, CHAIRMAN
PAUL NEWMAN
SANDRA D. KENNEDY
BOB STUMP
BRENDA BURNS

IN THE MATTER OF THE APPLICATION
OF TUCSON ELECTRIC POWER
COMPANY FOR THE ESTABLISHMENT OF
JUST AND REASONABLE RATES AND
CHARGES DESIGNED TO REALIZE A
REASONABLE RATE OF RETURN ON THE
FAIR VALUE OF ITS OPERATIONS
THROUGHOUT THE STATE OF ARIZONA.

Docket No. E-01933A-12-0291

**NOTICE OF FILING DIRECT
TESTIMONY OF JEFFREY
SCHLEGEL ON BEHALF OF
SOUTHWEST ENERGY EFFICIENCY
PROJECT**

Southwest Energy Efficiency Project ("SWEEP"), through its undersigned counsel,
hereby provides notice that it has this day filed the written direct testimony of Jeff
Schlegel.

RESPECTFULLY SUBMITTED this 21st day of December, 2012.

ARIZONA CENTER FOR LAW IN
THE PUBLIC INTEREST

Arizona Corporation Commission
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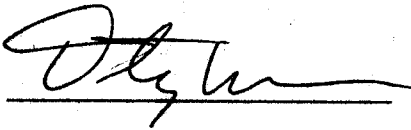
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1 ORIGINAL and 13 COPIES of
2 the foregoing filed this 21st day
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21st day of December, 2012 to:

8 All Parties of Record

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OF ARIZONA.

Docket No. E-01933A-12-0291

Direct Testimony of

Jeff Schlegel

Southwest Energy Efficiency Project (SWEEP)

December 21, 2012

**Direct Testimony of Jeff Schlegel, SWEEP
Docket No. E-01933A-12-0291**

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Introduction

Q. Please state your name and business address.

A. My name is Jeff Schlegel. My business address is 1167 W. Samalayuca Drive, Tucson, Arizona 85704-3224.

Q. For whom are you testifying?

A. I am testifying on behalf of the Southwest Energy Efficiency Project (SWEEP).

Q. Please describe the Southwest Energy Efficiency Project (SWEEP).

A. SWEEP is a public interest organization dedicated to advancing energy efficiency as a means of promoting customer benefits, economic prosperity, and environmental protection in the six states of Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming. SWEEP works on state legislation; analysis of energy efficiency opportunities and potential; expansion of state and utility energy efficiency programs as well as the design of these programs; building energy codes and appliance standards; and voluntary partnerships with the private sector to advance energy efficiency. SWEEP collaborates with utilities, state agencies, environmental groups, universities, and energy specialists in the region. SWEEP is funded by foundations, the U.S. Department of Energy, and the U.S. Environmental Protection Agency. I am the Arizona Representative for SWEEP.

Q. What are your professional qualifications?

A. I am an independent consultant specializing in policy analysis, evaluation and research, planning, and program design for energy efficiency programs and clean energy resources. I consult for public groups and government agencies; and I have been working in the field for over 25 years. In addition to my responsibilities with SWEEP, I am working or have worked extensively in many states that have effective energy efficiency programs, including California, Connecticut, Massachusetts, New Jersey, Vermont, and Wisconsin. In 1997 I received the Outstanding Achievement Award for the International Energy Program Evaluation Conference. I have testified before the Arizona Corporation Commission in many proceedings.

Q. What is the purpose of your testimony?

A. In my testimony, I will summarize the public interest in increasing electric energy efficiency; discuss the history of Tucson Electric Power's (TEP) energy-saving offerings for customers; explain why energy efficiency, as a fundamental energy resource meeting the real energy needs of customers at lowest cost, must be satisfactorily funded through a stable cost recovery mechanism; comment on

1 TEP's proposal to amortize energy efficiency program funding as a regulatory
2 asset; recommend modifications to TEP's proposed cost benefit analysis of
3 energy efficiency programs so that it better reflects the true costs and benefits;
4 support full revenue decoupling and oppose TEP's proposed Lost Fixed Cost
5 Recovery (LFCR) mechanism, explaining why it is insufficient for reducing the
6 utility disincentive to pursue energy efficiency; and comment on energy
7 efficiency's role in mitigating large future rate increases for TEP customers.

8 **The Public Interest in Increasing Electric Energy Efficiency**
9

10 Q. What is the public interest in increasing electric energy efficiency?
11

12 A. Electric energy efficiency is in the public interest. Increasing energy efficiency
13 will provide significant and cost-effective benefits for all TEP customers, the
14 electric system, the economy, and the environment. Electric energy efficiency is a
15 reliable energy resource that is less expensive than other available energy
16 resources. Consequently, increasing energy efficiency will save consumers and
17 businesses money through lower electric bills and the deferral of unnecessary
18 infrastructure, resulting in lower total costs for customers.
19

20 Increasing energy efficiency also reduces load growth; diversifies energy
21 resources; enhances the reliability of the electricity grid; reduces the amount of
22 water used for power generation; reduces air pollution; creates jobs that cannot be
23 outsourced; and improves the economy. In addition, meeting a portion of load
24 growth through increased energy efficiency can help to relieve system constraints
25 in load pockets. By reducing electricity demand, energy efficiency mitigates
26 electricity and fuel price increases and reduces customer vulnerability and
27 exposure to price volatility. Energy efficiency does not rely on any fuel and is not
28 subject to shortages of supply or increased prices for natural gas or other fuels.
29

30 Q. What are the estimated costs for energy efficiency savings?
31

32 A. Energy efficiency is a reliable energy resource that costs significantly less than
33 other resources for meeting the energy needs of customers in TEP's service
34 territory. For example, in 2011, the cost of energy efficiency programs per
35 lifetime kWh saved was \$0.011.¹ Notably, in its 2012 Integrated Resource Plan,
36 TEP identifies energy efficiency as the "lowest cost resource" and uses a levelized
37 cost of energy efficiency of \$60/MWh (\$0.060/kWh).² In comparison, the
38 levelized cost of new generation for other energy resources is substantially more:
39 natural gas combined cycle generation costs between \$0.083-\$0.115/kWh; coal
40 generation costs between \$0.107-\$0.200/kWh; and nuclear generation costs
41 \$0.136/kWh.³

¹ Tucson Electric Power, January-December 2011 Demand Side Management Report, March 1, 2012.

² Tucson Electric Power, 2012 Integrated Resource Plan, April 2, 2012

³ Ibid.

1
2 Q. Why should energy efficiency be considered in the context of a rate case
3 proceeding?
4

5 A. The Commission, in approving any order that increases rates for customers,
6 should ensure that the least cost resource – energy efficiency – is fully pursued.
7 Consequently in its order on the TEP rate case, the Commission should ensure
8 that TEP is on a pathway to meet the energy savings requirements in the Electric
9 Energy Efficiency Standard (“EEES”) by 2016; ensure that there is adequate
10 funding to achieve the EEES energy savings requirements and attain the
11 associated customer and public benefits; and treat energy efficiency as the core
12 energy resource that it is by providing a stable, long-term cost recovery
13 mechanism and funding.

14 **The History of TEP’s Energy Efficiency Offerings for Customers**
15

16 Q. How long has TEP offered energy efficiency opportunities for customers?
17

18 A. TEP has offered money-and-energy-saving opportunities for customers since the
19 1980s.⁴ These programs have been recognized as best practices, including TEP’s
20 residential new construction program, which has served as a model for other
21 electric utilities. TEP has also been recognized for its innovative offerings,
22 including its Shade Tree program.
23

24 Q. At what levels has TEP invested in energy efficiency?
25

26 A. From 2009-2011 TEP invested more than \$33.6 million in energy efficiency. Over
27 this period, TEP’s annual commitment to energy efficiency programs grew from
28 \$7.4 million in 2009 to \$13.0 million in 2010 and \$13.2 million in 2011.
29

30 Q. What have TEP’s EE programs accomplished?
31

32 A. TEP’s cost-effective programs have delivered significant economic, energy, and
33 environmental benefits for customers. For example, from 2009-2011, TEP reports
34 that its energy efficiency portfolio delivered:
35

- 36 • Net benefits exceeding \$150 million dollars;
- 37 • Lifetime savings exceeding 3.5GWh;
- 38 • Lifetime savings exceeding 2.2 million therms;
- 39 • Lifetime water reductions exceeding 1.5 billion gallons;
- 40 • Lifetime SO_x reductions exceeding 3,700 tons; and
- 41 • Lifetime NO_x reductions exceeding 4,900 tons.

⁴ Tucson Electric Power, Direct Testimony of David G. Hutchens, In the Matter of the Application of Tucson Electric Power Company for Approval of its 2011-2012 Energy Efficiency Implementation Plan, Docket No. E-01933A-11-0055, June 15, 2012.

The Current Status of TEP's Energy Efficiency Programs

Q. What energy efficiency plans did TEP propose before its current Energy Efficiency Resource proposal in the rate case proceeding?

A. In January 2011, TEP filed a 2011-2012 Energy Efficiency Implementation Plan with the Commission. This two-year plan proposed the launch of new and the expansion and continuation of existing customer energy-saving opportunities. The Plan anticipated delivery of cumulative annual energy savings exceeding 300 GWh and net benefits exceeding \$130 million.

In this plan TEP proposed several new cost-effective money-and-energy-saving opportunities for customers. These new opportunities were designed to serve more customers (including small business owners; renters; and schools) and provide new ways for customers to save money and energy. These proposed offerings were strongly supported by TEP ratepayers (as evidenced by the hundreds of handwritten and email communications the Commission received in the Implementation Plan docket and the public comments made at open meetings concerning the Plan) and have been successfully implemented in other Arizona electric utility service territories such as the service territories of the Arizona Public Service Company and Salt River Project. In addition, some of the proposed offerings were developed after years of work by TEP ratepayers, including the forty religious institutions that comprise the Pima County Interfaith Council.

TEP's proposal also included a request for expedited review and approval with the goal of launching new and expanding existing customer opportunities by June 2011. This expedited review and Commission approval did not occur.

Q. Has TEP's 2011-2012 EE Implementation Plan, introduced in January 2011, been approved yet?

A. Not yet. TEP's 2011-2012 Plan was considered by the Arizona Corporation Commission at its Open Meeting in January 2012 (a year after it had been introduced and after the 2011 program year had already concluded). At that meeting, and in response to a suggestion from TEP and other stakeholders (including SWEEP), the Commission encouraged interested stakeholders to negotiate a compromise solution to address outstanding issues in TEP's Plan, including TEP's lost fixed cost revenue recovery mechanism (the "Authorized Revenue Recovery True-up" mechanism or AART), which several parties did not support.

Acting on the Commission's request, interested stakeholders including TEP, Commission Staff, the Residential Utility Consumer Office (RUCO), Freeport McMoRan Copper & Gold, Inc., Arizonans for Electric Choice and Competition (AECC), and SWEEP met over several days to contemplate a mutually agreeable

1 compromise. The end product of these conversations was the "Modified Plan,"
2 which the Commission considered at its March 2012 utilities Open Meeting. At
3 that Open Meeting, the Commission elected to hold evidentiary hearings on the
4 matter. TEP subsequently updated the Modified Plan to address issues raised by
5 AECC and the lapse in time. This revised plan, the "Updated Modified Plan" –
6 which SWEEP supports alongside TEP, RUCO, AECC, and EnerNOC – was filed
7 on May 2, 2012, and was the subject of an evidentiary hearing in July 2012.
8

9 Q. What was the outcome of the evidentiary hearing on the Updated Modified Plan?
10

11 A. In August 2012, the Arizona Corporation Commission Hearing Division issued a
12 Recommended Opinion and Order recommending the Updated Modified Plan for
13 approval, specifically noting the strong customer support for TEP's energy
14 efficiency programs.⁵ However, the Recommended Opinion and Order has not yet
15 been scheduled for Commission consideration at a Commission Open Meeting.
16

17 Q. With TEP's energy efficiency proposals pending, what is the current status of
18 TEP's energy efficiency programs?
19

20 A. Following the Commission Open Meeting in March 2012, many of TEP's
21 existing programs serving residential and commercial customers were
22 suspended. In addition, TEP's plans to launch new programs and opportunities to
23 serve more customers were indefinitely delayed. Compared with 2011 levels,
24 existing programs had to be significantly downsized. For example, overall
25 efficiency investment was halved from \$11.3 million in 2011 to \$5.6 million in
26 2012, and investment in almost every existing energy efficiency program was
27 slashed dramatically (with the exception of low income weatherization). Energy
28 efficiency program cuts ranged between 12-72%, with the greatest changes to
29 programs serving business and commercial customers.
30

31 Q. Why were existing programs suspended and/or cut in 2012?
32

33 A. Two factors contributed to the suspension and cuts to existing programs:
34

35 1. The Commission approved new energy efficiency programs and expanded
36 program budgets for TEP at several points in the 2010-2011 timeframe, yet the
37 adjustor mechanism to collect the Commission-approved energy efficiency
38 program funding from customers has not been reset to accommodate
39 Commission-authorized program funding levels since June 1, 2010. TEP
40 complied with Commission authorization by implementing the Commission-
41 approved energy efficiency programs and approved budgets, but the ratepayer
42 funding to support the budgets was not collected from ratepayers due to the delay
43 in resetting the adjustor.

⁵ Recommended Opinion & Order from the Hearing Division, In the Matter of the Application of Tucson Electric Power Company for Approval of its 2011-2012 Energy Efficiency Implementation Plan, Docket No. E-01933A-11-0055, August 21, 2012.

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2. The Updated Modified Plan (and earlier TEP proposals) included a proposal to reset this adjustor mechanism. Because Commission action on the Plan has not occurred, this adjustor mechanism has not been reset to adequately fund Commission-authorized programs and program budgets.

Q. What are SWEEP's concerns about the status of TEP's energy efficiency offerings?

A. SWEEP is extremely concerned about the deep cuts to TEP's energy efficiency programs and suspension of TEP's energy efficiency programs because these programs deliver important and substantial customer, economic, environmental, and utility system benefits. Notably, these programs help customers reduce their energy bills. These program cutbacks have caused significant disruptions in the demand side management marketplace, leading to a loss of local jobs. In addition, proposed new programs and program expansions, which would provide additional cost-effective benefits to customers, have not been implemented. Many of these program cuts also occurred during the summer of 2012, when customer electricity bills were highest, and customers would have benefited from opportunities to save energy and money.

Q. How does TEP's Energy Efficiency Resource proposal in its rate case application relate to the Updated Modified Plan?

A. TEP's Energy Efficiency Resource proposal is separate and distinct from its Updated Modified Plan. However, if approved, TEP's Energy Efficiency Resource proposal would provide stability to customers and the DSM marketplace around TEP's energy efficiency offerings moving forward, ensuring opportunities for customers to save money and energy on their utility bills. As TEP witness Craig Jones explained, the TEP proposal "enhances the current process and establishes a method that should reduce the number and contentious nature of recent EE filings, resulting in a more stable environment for all parties. In this manner, TEP's Energy Efficiency Resource proposal is designed so as not to repeat the challenges encountered with TEP's 2011-2012 Energy Efficiency Plan."⁶

Q. Should the Commission still take action on the Updated Modified Plan before the conclusion of the TEP rate case?

A. Yes, absolutely. Commission approval of the Updated Modified Plan will also ensure delivery of important customer services and benefits in the near-term, before the conclusion of the TEP's rate case. Further delay of energy-saving programs is not in the interest of TEP customers.

⁶ Tucson Electric Power, Direct Testimony of Craig A. Jones, In the Matter of the Application of Tucson Electric Power Company for Approval of its 2011-2012 Energy Efficiency Implementation Plan, Docket No. E-01933A-11-0055, June 15, 2012.

1
2 Q. After the rate case concludes, would TEP's proposal provide adequate funding to
3 deliver energy savings into the future?
4

5 A. TEP's Energy Efficiency Resource proposal includes total funding for energy
6 efficiency programs of \$80 million over three years (August 2013- December
7 2016), or about \$27 million annually. SWEEP commends TEP for contemplating
8 this significant increase to funding energy efficiency programs, however we
9 believe that this level of funding is still insufficient to deliver the level of savings
10 necessary to achieve the EEES by 2016.

11 **Amortizing Energy Efficiency as a Regulatory Asset**
12

13 Q. What options are generally available to electric utilities for paying the upfront
14 cost of energy efficiency programs?
15

16 A. Energy efficiency programs produce long-term energy savings to customers but
17 require some upfront costs for program implementation. Investor owned utilities,
18 like TEP, generally have two ways to pay for these upfront costs. One way is to
19 include the program costs in the company's annual operating expenses; the
20 second option is to amortize program costs, whereby the upfront costs are paid off
21 over time (plus interest), much like a mortgage on a home. This second option
22 would treat energy efficiency as a capital investment, similar to an investment in
23 other energy resources, and would include a Commission-authorized rate of
24 return.
25

26 Q. Which of these two options does TEP propose for recovering its energy efficiency
27 program costs as part of its Energy Efficiency Resource proposal?
28

29 A. TEP proposes the second option of amortizing energy efficiency program costs as
30 a regulatory asset and recovering those costs over time through its Demand Side
31 Management Surcharge (DSMS) rather than in its base rate.
32

33 Q. What are the pros and cons of the two different cost recovery approaches?
34

35 A. In general, amortizing energy efficiency as a regulatory asset would help lower
36 the upfront costs and rate impacts of energy efficiency program offerings that are
37 ultimately borne by ratepayers -- just as a mortgage makes it easier to purchase a
38 home. However, this approach will also increase the overall costs of those
39 programs over time. Any investment that is amortized over time will necessarily
40 include a carrying cost (like the interest on a mortgage) required to finance the
41 investment. This increases the overall cost of the investment, but it also eases the
42 upfront cost burden by spreading the costs out over a period of time, thereby
43 reducing initial rate impacts.
44

- 1 Q. Has SWEEP supported similar approaches for treatment of energy efficiency in
2 the past?
3
- 4 A. Yes. SWEEP has supported similar approaches in proceedings before this
5 Commission and before Commissions in other states.
6
- 7 Q. Does SWEEP support TEP's proposal to amortize energy efficiency as a
8 regulatory asset?
9
- 10 A. SWEEP finds TEP's proposal to amortize energy efficiency as a regulatory asset
11 acceptable, especially considering the instability in energy efficiency budget and
12 programs experienced by TEP and its customers over the last two years. We have
13 supported similar approaches in the past and believe it is one we can be
14 supportive of now. However, we do have some concerns about specific aspects of
15 TEP's proposal that could affect the ultimate cost to ratepayers. I will address
16 these aspects in the next part of my testimony.

17 **TEP's Proposal to Amortize Energy Efficiency Program Costs Over Four Years**
18

- 19 Q. What factors will affect the cost of amortizing energy efficiency as a regulatory
20 asset?
21
- 22 A. If the Commission authorizes TEP to amortize energy efficiency as a regulatory
23 asset through its DSMS, several factors could affect ratepayer costs and deserve
24 attention by the Commission and other stakeholders. One of these factors is the
25 amortization period for energy efficiency investments.
26
- 27 Q. Why should energy efficiency costs be amortized over time?
28
- 29 A. A fundamental accounting principle for any capital expenditure is to spread the
30 costs of the investment over time so that they are more closely aligned with the
31 stream of benefits produced by that investment. Since energy efficiency programs
32 provide benefits to TEP and its customers over many years, it can make sense to
33 treat energy efficiency investments this way and amortize costs over time. If
34 program costs are not spread out, then the initial costs and rate impacts may
35 appear high to some, even if the investment is prudent over the long term.
36 However, caution must be taken because a longer amortization period will
37 increase the carrying costs required to finance the programs, leading to higher
38 long-term costs to ratepayers.
39
- 40 Q. Does SWEEP support TEP's proposed four-year amortization period for energy
41 efficiency investments?
42
- 43 A. Yes. We believe a four-year amortization period appropriately aligns the costs and
44 benefits to customers of energy efficiency programs, and achieves the appropriate

1 balance. SWEEP would not be supportive of an amortization period longer than
2 four years.

3
4 Q. Why does SWEEP not support an amortization period longer than four years?

5
6 A. While extending the amortization period may further lower upfront costs and rate
7 impacts to customers, doing so may place a significant burden on both the
8 Commission and TEP's investors.

9
10 A longer timeline would result in larger regulatory assets that persist for a longer
11 period of time. Consequently, these regulatory assets would be inherited by future
12 Commissions, potentially restricting the ability of future Commissions to change
13 course as new needs arise. This may put future Commissions in a challenging
14 position, especially if the costs of prior investments remain to be recovered, but
15 the immediate energy savings benefits are not available to all current customers
16 (e.g. if the Commission reduces or eliminates programs). ACC Commissioners
17 have sometimes not been overjoyed about inheriting the costs of decisions made
18 by prior Commissioners.

19
20 From a TEP investor perspective, the capital investments in energy efficiency are
21 treated as "regulatory assets" for legal and accounting purposes. Because of this
22 special status, the ability for the company to earn back the original cost of the
23 investment depends on future Commission decisions about rates over the life of
24 the asset. A longer timeline would create significant uncertainty for TEP's
25 investors who may not be willing to finance such a long-lived regulatory asset.

26
27 Thus, a balance must be struck between the advantages of longer-term
28 amortization and the additional risks involved. SWEEP believes a four year
29 period strikes that balance.

30 **TEP's Proposed Rate of Return for Energy Efficiency Investments**

31
32 Q. Are there other major factors that could impact the cost of TEP's energy
33 efficiency programs to customers under TEP's proposal?

34
35 A. Yes. Another major factor is the rate of return the Commission authorizes for
36 TEP's energy efficiency resource investments.

37
38 Q. What is the "normal" rate of return that a company such as TEP is authorized to
39 earn on its investments?

40
41 A. For most of its rate base, a Weighted Average Cost of Capital (WACC) is the
42 "normal" rate of return that the Commission authorizes a company like TEP to
43 earn.

44
45 Q. What has TEP proposed for a rate of return on its energy efficiency investments?

1
2 A. TEP has proposed that the return on its energy efficiency resource investments be
3 based on the WACC and capital structure the Commission authorizes in its order
4 on the TEP rate case, adjusted to reflect a 200 basis point bonus return in TEP's
5 return on equity.

6
7 Q. Is SWEEP comfortable with this proposal?
8

9 A. SWEEP is comfortable with a company earning a return on its energy efficiency
10 investments based on the WACC and capital structure the Commission authorizes
11 in its order on the TEP rate case, so long as that return is reasonable and
12 consistent with other Commission rate case decisions.
13

14 Q. What is SWEEP's view on TEP's proposed 200 basis point bonus return?
15

16 A. Our support for this rate of return is conditional on this bonus return being
17 performance-based, meaning that the level of the bonus return would depend on
18 the performance of TEP's energy efficiency programs.
19

20 Q. Why should the bonus return for energy efficiency programs be performance-
21 based?
22

23 A. Investments in traditional energy resources only provide value to their
24 shareholders once a plant is in operation. If a company mismanages its capital
25 resources and is unable to deliver an investment, it will be held accountable for
26 these mistakes upon seeking future capital investments. Similarly, energy
27 efficiency programs only provide value if savings levels are actually achieved –
28 an outcome comparable to a plant that is in operation. Thus TEP must be held
29 accountable by the Commission and be encouraged through the bonus return to
30 deliver these savings through a performance-based mechanism in order to justify
31 the enhanced return to its shareholders. This performance-based mechanism
32 should be focused on achieving the savings and benefits for customers, while
33 ensuring that TEP delivers programs cost-efficiently.

34 **TEP's Use of the Societal Cost Test to Evaluate Energy Efficiency Programs**
35

36 Q. Regardless of how energy efficiency programs are funded, what method does TEP
37 propose for selecting prudent and cost-effective energy efficiency programs and
38 measures?
39

40 A. TEP intends to use the Societal Cost Test ("SCT") as the primary means
41 for screening cost-effective energy efficiency investments. TEP further
42 states that it intends only to invest in and implement new EE investments
43 that produce a benefit/cost ratio greater than 1.0; resulting from TEP's
44 analysis, using the Societal Cost Test.
45

1 Q. Do Commission rules require use of the SCT to screen energy efficiency
2 investments?

3
4 A. Yes, the SCT is the required test for screening and determining the cost-
5 effectiveness of energy efficiency investments under A.A.C. R14-2-2412.B.

6
7 Q. What aspects of TEP's proposed SCT does SWEEP not support?

8
9 A. TEP should improve their SCT methodology so that it is a true SCT. In particular,
10 TEP's methodology should better align true costs and benefits by using a true
11 social discount rate (as is required by the SCT); by including non-energy and non-
12 market benefits in the SCT; and by improving the valuation of avoided costs. I
13 will address each of these individually starting with the discount rate.

14
15 Q. What discount rate has TEP proposed to use in its SCT?

16
17 A. TEP has proposed using the Weighted Average Cost of Capital (WACC) as its
18 discount rate for its SCT.

19
20 Q. Does SWEEP support TEP's proposal to use its WACC as the discount rate for its
21 SCT?

22
23 A. No, using a WACC as the discount rate does not conform to a true SCT.

24
25 A true SCT weighs the costs and benefits to all members of society by using a
26 social discount rate that reflects how the public at large values costs and benefits
27 over time. The WACC, however, is a discount rate reflecting the preferences of
28 TEP's lenders and shareholders and not society at large.

29
30 If TEP were the sole beneficiary of energy efficiency investments, a WACC
31 would be the appropriate discount rate to use since it reflects how the company's
32 investors value future costs and benefits over time. However, WACC is not
33 relevant for screening energy efficiency investments because TEP is not intended
34 to be the sole beneficiary of any energy efficiency investments implemented.
35 Indeed, the energy efficiency requirements approved by the Commission are
36 intended to provide not only private benefits to TEP, but also public benefits to
37 ratepayers and to society as a whole. Selecting a discount rate that is too high,
38 such as TEP's WACC, will undervalue the benefits energy efficiency provides to
39 the public over time and possibly exclude energy efficiency opportunities that are
40 cost effective under a true SCT. SWEEP believes it is more appropriate to use a
41 social discount rate that reflects the preferences of the larger constituency that
42 benefits from energy efficiency measures, as opposed to the more restrictive use
43 of WACC, which envisions TEP as the sole beneficiary of energy efficiency.

44
45 Q. What social discount rate should be applied to TEP's cost benefit analysis for
46 screening energy efficiency investments?

1
2 A. In accordance with the October 1, 2010 DSM Collaborative "Memorandum on
3 Arizona Benefit/Cost Analysis of DSM Programs", SWEEP supports the use of a
4 social discount rate based on the yield from U.S. Treasury securities with a cap of
5 4%. This social discount rate better reflects how the public at large values costs
6 and benefits over time.
7

8 Q. Turning now from the discount rate, let's discuss how costs and benefits are
9 quantified in the SCT. In applying the SCT, what is TEP's proposed approach to
10 valuing the benefits of energy efficiency programs?
11

12 A. The SCT, as established in Decision No. 71436, allows for the inclusion of
13 societal benefits, including non-market benefits. However, TEP's proposal does
14 not quantify any non-energy or non-market benefits, simply stating that "non-
15 energy benefits will be monetized when supporting research is available." By not
16 including any non-energy or non-market benefits in its analysis, TEP's cost test
17 more closely resembles a different cost test, the Total Resource Cost test, which is
18 not authorized by the Commission under A.A.C. R14-2-2412.
19

20 Q. Does SWEEP support the inclusion of non-energy and non-market benefits in
21 TEP's benefit/cost test when supporting research and documentation is available?
22

23 A. Yes. A true SCT includes non-energy and non-market benefits. Moreover,
24 supporting research for several of these non-energy and non-market benefits is
25 already available and should enable TEP to quantify at least some of these
26 benefits in its SCT. As an example, SWEEP attaches Exhibit SWEEP-1 showing
27 results from a recent study our organization commissioned to evaluate a variety of
28 benefits that energy efficiency programs provide across the Southwestern U.S.
29 The results include specific non-energy benefits for TEP's service territory such
30 as water savings, which should be included in the SCT.
31

32 As SWEEP-1 also shows, job creation is just one of the potential non-market
33 benefits that TEP energy efficiency programs deliver. SWEEP includes Exhibit
34 SWEEP-1 as an example of an analysis it performed quantifying job creation
35 impacts in 2020 of best practice energy efficiency program implementation in the
36 TEP service territory.
37

38 Q. What is TEP's approach to valuing the market benefits (i.e., benefits that can be
39 bought or sold) from energy efficiency programs?
40

41 A. In brief, TEP estimates market benefits from energy efficiency programs by
42 summing the utility's avoided costs (including energy costs, capacity costs, and
43 environmental costs) that all result from energy savings its programs achieve.
44

45 Q. Does SWEEP support this approach to valuing avoided costs?
46

- 1 A. In general yes, however there are some additional benefits that TEP's
2 methodology does not include and deserve attention. For instance, conventional
3 resources carry additional risk to TEP and its customers due to fuel price
4 variability. To the extent that energy efficiency can displace reliance on
5 conventional resources, this provides additional benefits (both market and non-
6 market). Therefore SWEEP supports the inclusion of additional benefits for
7 energy efficiency investments reflecting their ability to hedge against this fuel
8 price risk.
9
- 10 Additionally, TEP should identify any potential future environmental compliance
11 costs (e.g., installing pollution control equipment on coal-fired power plants) that
12 are not already incorporated into its analysis. These compliance costs are distinct
13 from the externality costs already identified in TEP's proposed SCT. We note that
14 a significant driver of TEP's need to increase rates in this rate case stems from the
15 need to install costly environmental compliance measures. As witness Paul J.
16 Bonavia states in his testimony, TEP is anticipating "capital investments of
17 approximately \$300 million over the next five years to cover the costs associated
18 with new environmental mandates affecting several power plants." By avoiding
19 future need for conventional energy resources, energy efficiency can also help
20 reduce future environmental compliance costs and these avoided environmental
21 compliance costs should be captured in the SCT.
22
- 23 Q. What is SWEEP's view regarding levelizing avoided cost capacity benefits in the
24 SCT?
25
- 26 A. SWEEP supports levelizing avoided cost capacity benefits in the SCT
27 calculations. SWEEP supports treatment of the avoided cost of generation
28 capacity as annual levelized costs.
29
- 30 Q. We've now discussed the benefits side of the benefit/cost analysis. But what is
31 TEP's approach to valuing energy efficiency program costs?
32
- 33 A. TEP incorporates the following program costs in its benefit/cost analysis: program
34 implementation, marketing, consumer education, measurement and evaluation,
35 training and technical assistance, and planning and administration. Together these
36 comprise the capital cost for each program.
37
- 38 Q. Now that we've established the SCT's basic methodology, how should it be
39 applied to screen prudent and cost-effective energy efficiency investments?
40
- 41 A. The SCT can be used to screen cost-effective energy efficiency investments at
42 both the overall program level and at the individual measure level. The rules
43 established by the Commission speak to both, and SWEEP supports evaluation of
44 cost-effectiveness at the program level. It is important that the SCT evaluations do
45 not restrict the company too severely from pursuing a wide variety of measures
46 and packages of measures that benefit customers, and which can be delivered to

1 customers in a convenient and cost-efficient manner. Accordingly, the
2 Commission should prioritize cost-effectiveness screening at the program level
3 rather than the measure level.

4 **Full Revenue Decoupling to Reduce the Financial Disincentive to**
5 **Electric Utility Support of Energy Efficiency**
6

7 Q. Does TEP experience a financial disincentive to its support of energy efficiency
8 when its customers respond and become more energy efficient?
9

10 A. Yes. Traditional utility regulation links the utility's financial health to volumetric
11 sales of electricity, resulting in a utility financial disincentive to support energy
12 efficiency and other demand-side resources that reduce sales. Energy savings by
13 TEP customers (which are beneficial for customers, the economy, the utility
14 system, and the environment) result in lower revenues for the Company and the
15 under-recovery of Commission-authorized utility fixed costs. In general, this
16 financial disincentive can reduce utility support and enthusiasm for cost-effective
17 resources such as energy efficiency programs that minimize the long-term costs of
18 providing service. It could also impede potentially crucial utility support for
19 building energy codes and other policies that reduce utility bills for customers and
20 serve societal interests.
21

22 Q. Should a decoupling mechanism for TEP be implemented to reduce the financial
23 disincentive and encourage TEP to support additional increases in energy
24 efficiency through programs and other initiatives such as support of building
25 energy codes?
26

27 A. Yes. The financial interest of TEP should be better aligned with the interests of its
28 customers by reducing financial disincentives to utility support of energy
29 efficiency, thereby resulting in more energy savings and larger reductions in
30 customer energy bills.
31

32 SWEEP supports decoupling mechanisms to address issues related to energy
33 efficiency, i.e., when such mechanisms would be effective in substantially
34 increasing customer energy efficiency and reducing the financial disincentive to
35 electric utility support of increased energy efficiency.
36

37 SWEEP is not in favor of decoupling solely or primarily as a mechanism for the
38 utility to recover its fixed costs. Therefore, in SWEEP's view the implementation
39 of decoupling is premised on substantial increases in customer energy efficiency,
40 for which the decoupling mechanism would reduce the financial disincentive to
41 the utility of such increased energy efficiency. Because TEP's energy efficiency
42 proposal will deliver substantial energy efficiency savings for TEP customers,
43 decoupling in this situation is justified.
44

1 Q. Does full decoupling effectively reduce Company disincentives to the support of
2 activities that eliminate energy waste, including activities not directly linked to
3 the Company's energy efficiency programs?
4

5 A. Yes. Full decoupling effectively reduces Company disincentives to the support of
6 activities that eliminate energy waste. As such, full decoupling is important not
7 only for full utility support of energy efficiency programs but also for activities
8 that reduce sales but are not or may not be directly linked to the Company's
9 portfolio of energy efficiency programs. This could include utility support for
10 building energy codes; appliance standards; energy education and marketing; state
11 and local government energy conservation efforts; and federal energy policies.
12

13 Q. Does SWEEP support the "partial decoupling mechanism" (Lost Fixed Cost
14 Recovery or "LFCR") proposed by TEP?
15

16 A. No. SWEEP opposes TEP's proposed LFCR mechanism for several reasons. The
17 proposed LFCR mechanism inadequately reduces utility disincentives to energy
18 efficiency, and therefore results in fewer opportunities for customers to reduce
19 their energy bills. Consequently, it does not address the financial disincentive to
20 Company support of building energy codes, appliance efficiency standards, and
21 state initiatives and legislation. It will also likely result in contentious and
22 protracted technical proceedings at the Commission (as has been the experience in
23 lost revenue recovery mechanism proceedings in other states). Finally, the LFCR
24 mechanism represents an automatic rate increase. In contrast, because full revenue
25 decoupling allows for rate adjustments in both a positive and negative direction,
26 decoupling could result in either a credit or a charge on the customer bill.
27

28 LFCR does nothing to reduce TEP's financial incentive to encourage customers to
29 use more electricity – and the more customers waste energy, the more TEP
30 revenues and earnings increase. Also, under LFCR, as the Arizona economy
31 recovers and electric demand increases, TEP revenues and earnings would also
32 increase. Specifically, TEP could retain all revenues higher than the revenue
33 levels established by the test year, which would result in higher earnings. TEP
34 would also retain all revenues higher than the revenue levels established by the
35 test year from increased electrification and electric vehicles. In contrast, full
36 decoupling would provide a credit to customers for any revenues higher than
37 authorized revenues (determined as authorized revenue per customer multiplied
38 by the number of customers).

39 **Energy Efficiency's Role in Mitigating Future Capital Expenditures that Cause**
40 **Rate Increases**
41

42 Q. How does TEP's proposed increase to base rates compare to previous rate
43 increases and those of its peers?
44

1 A. Each rate case has its own unique circumstances so one must use caution when
2 making comparisons. Nevertheless, TEP's proposed rate increase of 15% is
3 significantly higher than its last rate increase of 6% in 2008. It is also much higher
4 than the rate increase recently authorized by the Commission of 3% for Arizona
5 Public Service Company.

6
7 Q. In your view, what are the main reasons TEP is requesting such a large rate
8 increase?

9
10 A. TEP's request for such a large rate increase is primarily due to the significant
11 capital expenditures the Company made in recent years combined with the rate
12 freeze imposed by the 2008 rate case settlement agreement. Because of this rate
13 freeze, and modest load growth in subsequent years, TEP was unable to recover
14 much of the costs for these new capital expenditures. As stated in the Direct
15 Testimony of Paul Bonavia:

16
17 The Company has invested nearly \$1.3 billion in capital from 2007
18 through 2011 to allow TEP to continue providing safe, reliable,
19 efficient, and environmentally responsible service...

20
21 The revenue increase we have requested in this filing was driven
22 higher each year during the rate freeze of the 2008 Settlement
23 Agreement.

24
25 SWEEP acknowledges these as credible reasons for TEP's rate increase
26 request. Indeed, new capital expenditures are one of the primary
27 underlying causes for rate increases – particularly capital expenditures
28 followed by low load growth, which limits opportunity for cost recovery.
29

30 Q. If TEP's proposal is approved, can we anticipate similar rate increase requests
31 from future capital expenditures?

32
33 A. It's impossible to predict what the future holds for TEP and its customers, but we
34 have some clues. For starters, we know that TEP anticipates additional capital
35 expenditures in the near future. Paul Bonavia's direct testimony speaks to this:

36
37 Moreover, we face significant needs in coming years from transmission and
38 distribution system improvements and the looming prospect of costly
39 environmental upgrades at our generating plants.

40
41 Meanwhile, TEP recently filed its 2012 Integrated Resource Plan (IRP) with this
42 Commission, which details anticipated future load obligations and resource
43 additions. These include maintaining a large fleet of existing thermal generation
44 resources, which will likely require environmental compliance expenditures. It
45 also includes investment in new natural gas generation capacity over the coming
46 years.

1
2 Q. Are you aware of any analysis that reviews the impacts TEP's current proposal
3 will have on future capital needs and compares the impacts to those anticipated in
4 its IRP?

5
6 A. No I am not. However, I would encourage Commission Staff and other
7 stakeholders to investigate this question closely since it may be a significant
8 driver of future rate increases.
9

10 Q. In your own view, what does the TEP's IRP suggest about its future capital
11 needs?
12

13 A. Assuming TEP successfully meets the compliance targets of the Renewable
14 Energy Standard and Electric Energy Efficiency Standard, TEP's load growth will
15 be essentially flat over the coming years. This is illustrated by the forecast Chart
16 67 of TEP's IRP,⁷ which also assumes that economic growth will return to the
17 "normal" levels the Company experienced before the recent recession.
18

19 Q. Is it reasonable to assume that TEP load growth will return to levels experienced
20 before the recent recession?
21

22 A. SWEEP has no reason to believe this assumption is unreasonable, however any
23 forecast is far from certain. TEP's IRP explores a sensitivity scenario whereby
24 load growth is higher than expected, but not one in which load growth is lower.
25 As such, the Commission should consider the possibility that economic growth
26 will not resume as quickly as TEP forecasts. Importantly, the Commission should
27 also consider that increased energy efficiency savings, including through
28 compliance with the EEES, would reduce load growth to levels lower than the
29 reference case forecast in TEP's IRP. In an attempt to understand the implications
30 of this possibility, SWEEP includes Exhibit SWEEP-2, which shows TEP's load
31 and resource forecasts in accordance with their recently filed IRP, as well as one
32 in which load grows at the rate experienced from 2007-2011.
33

34 Q. What conclusions does SWEEP derive from this preliminary analysis?
35

36 A. Slower than expected economic growth could lower sales and thus limit TEP's
37 future cost recovery opportunities. Importantly, increased energy efficiency
38 savings, including through compliance with the EEES, would reduce load growth
39 to lower sales levels. This would enable TEP to avoid some of the capital
40 expenditures it currently anticipates such as investments in new natural gas plants.
41 Furthermore, low load growth combined with full energy efficiency compliance
42 may permit TEP to retire some of its existing generation units. This could avoid
43 costly capital expenditures on environmental compliance measures that lead to
44 future rate increases. However, this outcome is only feasible if full compliance
45 with the energy efficiency standard is achieved.

⁷ Tucson Electric Power, 2012 Integrated Resource Plan, April 2, 2012

Conclusion

1
2
3
4
5
6

Q. Does this conclude your testimony?

A. Yes.

**EXHIBIT SWEEP-1 – THE \$20 BILLION BONANZA: BEST PRACTICE
ELECTRIC UTILITY ENERGY EFFICIENCY PROGRAMS AND THEIR
BENEFITS FOR THE SOUTHWEST**

The table below is excerpted from a presentation given by SWEEP on its recently published report, *The \$20 Billion Bonanza: Best Practice Electric Utility Energy Efficiency Programs and Their Benefits for the Southwest*. The full presentation and report can be found at the following website:

<http://swenergy.org/programs/utilities/20BBonanza.htm>

Estimated Benefits by Utility

Electricity Savings in 2020 (GWh/yr)	6,418	5,966	2,139	401
Net Economic Benefits (billion \$)	2.80	2.61	0.93	0.18
Net Increase in Jobs in 2020	3,990	3,710	1,330	250
Water Savings in 2020 (million gallons)	1,575	1,465	525	98



EXHIBIT SWEEP-2 – ANALYSIS OF TEP’S FUTURE LOAD AND RESOURCES ACCORDING TO ITS INTEGRATED RESOURCE PLAN

The chart below illustrates the opportunity for avoiding future capital expenditures (and hence, rate increases) that is afforded by full compliance with the EEES. These data were drawn from information in TEP’s 2012 Integrated Resource Plan. The solid black line indicates TEP’s forecasted load obligations (including firm wholesale load and planning reserve margins), which the Company anticipates will grow at about 2.2% annually through 2025, *without* energy efficiency impacts. The colored areas underneath this line indicate the planned resources used to fulfill the load obligation. For the last five years, TEP has experienced declining load growth due primarily to the economic recession. The dotted black line represents a future scenario whereby the present trend of declining load growth continues into the future, but in the future resulting from the energy efficiency savings and the EEES. Under such a scenario, the need for resources above this line would be obviated. This could include future capital expenditures on new or existing plants or resources.

